Income and Living Standards During an Unemployment Spell

Final Report

Prepared for:

Human Resources Development Canada

May 1998

Prepared by:

Martin Browning
Department of Economics
McMaster University

SP-AH051E-05-98
(également disponible en français)

The views expressed in this study are the personal views of the author and not necessarily those of HRDC.

Preface

Human Resources Development Canada (HRDC), in its policies and programs, is committed to assisting all Canadians in their efforts to live contributing and rewarding lives and to promote a fair and safe workplace, a competitive labour market with equitable access to work, and a strong learning culture.

To ensure that public money is well spent in pursuit of this mission, HRDC rigorously evaluates the extent to which its programs are achieving their objectives. To do this, the Department systematically collects information to evaluate the continuing rationale, net impacts and effects, and alternatives for publicly-funded activities. Such knowledge provides a basis for measuring performance and the retrospective lessons learned for strategic policy and planning purposes.

As part of this process, the Department commissioned five formal evaluation studies on how Canadians adjusted to the 1994 UI reforms. These studies were performed by external academic subject-matter experts. Each evaluation represents a stand alone analysis of a specific topic.

Bob Wilson
Director General
Evaluation and Data Development

Ging Wong
Director
Strategic Evaluation and Monitoring

106-02607/

Table of Contents

Executive Summary i

1. **The Incidence of the Dependents' Rule** 1

2. **Living Standards After a Job Loss** 5
   - 2.1 Who experienced hardship? 5
   - 2.2 Changes in income and total expenditure 10

3. **Living Standards of the Unemployed** 17
   - 3.1 Personal and household income 17
   - 3.2 Changes in total expenditures among the unemployed 23
   - 3.3 UI benefit levels and expenditure changes 28

4. **Conclusions** 33

List of Tables

Table 1.1 Eligibility for Dependents' Rate by Demographic Group 1

Table 1.2 Eligibility for Dependents' Rate by Economic Group 2

Table 2.1 Hardship by Unemployment Experience 6

Table 2.2 Hardship by Current Job Status 7

Table 2.3 Hardship by Family Structure 8

Table 2.4 Hardship by Assets at Separation Date 9

Table 2.5 Hardship Regression 9

Table 2.6 Hardship and Changes in Expenditures 12

Table 2.7 Proportional Changes in Income and Expenditure 14

Table 2.8 Tests for the Equality of Distributions 14

Table 2.9 Income and Expenditure Categories 15

Table 2.10 Regression of Proportional Expenditure Changes 15

Table 3.1 A Comparison of Different 'On Claim' Measures 18

Table 3.2 Distribution of Benefits and Personal Income 18

Table 3.3 Distribution of Actual Replacement Rate 19

Table 3.4 Distribution of Personal Income 20

Table 3.5 UI Receipt by Family Structure 21

Table 3.6 Distribution of Reported Changes 24

Table 3.7 Means of Proportional Expenditure Changes 26

Table 3.8 Regression Coefficients for Proportional Expenditure Changes 27

Table 3.9 Multiple Regression Coefficients 27

Table 3.10 Proportional Expenditure Changes and UI Benefits 29

Executive Summary

1. The incidence of the dependents' rule

Bill C-17 reduced the statutory Unemployment Insurance replacement rate for most claimants from 57 percent to 55 percent but also introduced a higher rate of 60 percent for claimants with dependents with low insurable earnings. An analysis of who received the higher rate was conducted using the 1995 Canadian Out of Employment Panel (COEP). The analysis revealed that women claimants, those who previously had part time work and/or lone parents were much more likely to receive the higher rate than other claimants who had children (claimants with no children are, by definition, ineligible for the higher rate). A second finding was that significant numbers of those receiving the higher benefit did not 'need' it. In particular, many recipients of the higher rate had an employed spouse who contributed substantially to household income. Finally, many low income households were eligible for Social Assistance. For households in this group who were receiving Social Assistance, the extra UI benefit did not lead to higher household income since Social Assistance is reduced dollar for dollar with higher UI payments.

2. Living standards after a job loss

2.1 Who experienced hardship?

The second half of the report deals with income support and living standards. Once again all of the analysis was conducted using the 1995 COEP. The first part of the analysis examined the responses to a question concerning whether the reference job separation lead to "economic hardship" for the respondent's household at some time between the separation from the job that represents the baseline for the survey (the "reference" job) and the first interview. It was found that respondents are more likely to report hardship if:

- The respondent has an extended spell of unemployment (over 5 weeks). In particular, three quarters of those who were unemployed continuously between the separation date and the interview date (an average period of nine months) report hardship.

- The household has zero or negative net assets at the job loss.

- At the interview date, the respondent was employed but had an unsatisfactory job (as compared with the reference job).

- The respondent brought in a high fraction of household income before the job separation. In particular, those who accounted for less than 25 percent of household income before the job separation were very unlikely to report hardship.

- The respondent is single or is a lone parent.

2.2 Changes in income and total expenditure

As well as the subjective measure of "hardship" discussed above, the COEP also contains 'objective' measures of changes in (net of tax) household income and total expenditure (that is, monthly expenditures on everything including housing costs, groceries, clothing, entertainment etc.). Since these measures refer to the month before the interview relative to the month before the separation from the reference job they give a different picture to the hardship question which refers to the whole period between the separation and the first interview.

The main findings for changes in household income and household monthly expenditure were:

- Income changes fell into three groups. For those who are back in work at a job they report is better than the reference job, household income was about the same for most respondents although some reported a rise. For those who are back in work at a job they report is about as good as the reference job, household income is unchanged. For those who are either back in work at a job that is less satisfactory than the reference job or were unemployed at the interview, household income was unchanged for about one quarter of the group but three quarters reported a fall in income. For some, this fall was quite large; for example, over one quarter of those who are unemployed reported that their household income had fallen by more than 35 percent.

- Expenditure change patterns were somewhat different. Typically those back in employment at a job that was at least as good as the reference job reported no change, although about one quarter reported a rise. Those who were employed at less satisfactory job or were unemployed at the interview but had some job between the reference job separation and the first interview reported no change in expenditure on average, although about one quarter reported a fall and one quarter a rise. Very few of those who were continuously unemployed reported a rise but a large fraction reported no change. One quarter of respondents in this group reported a fall in expenditure of greater than 14 percent.

- The link between income changes and expenditure changes was strongest for those who are back in employment but even for this group expenditure changes did not mirror income changes one for one. Typically, a one dollar rise in income was associated with a rise in expenditures of 28 cents. For the current unemployed there is a significant but smaller response of expenditure changes to income changes - the estimated fall in total expenditure for a fall in income of one dollar was about 16 cents.

- There is a strong indication that amongst those who are not back in work at a job at least as good as the reference job there are some who are "making ends meet" by taking unsatisfactory and short term jobs. For this group expenditure changes are much the same whether or not they are in employment at the interview.

3. Living standards of the unemployed

Our main finding is that for households that were unemployed at the first interview (that is, about nine months after the reference job separation) there is only a weak link between UI benefit levels and changes in monthly expenditures. All of the details given below suggest that some households in which someone becomes unemployed have mechanisms for increasing other household income or for drawing on saving or running up debt that effectively cut the link between earnings losses and expenditures (at least in the medium run).

It is extremely important to realise that whilst this may be true for our sub-sample of unemployed workers, it cannot be inferred from this that the household of a randomly selected worker who experienced a nine month spell of unemployment would be able to so effectively insulate expenditures from earnings loss. Clearly, households that faced a large expenditure fall were more likely to take any job (or to search for a new job more intensively) and hence to be employed at the first interview.

The following provides the details of the investigation into the incomes and expenditures in our sample.

3.1 Personal and household income

The findings presented above concern all workers who separated from a job in the time window covered by the 1995 COEP. To analyse the impacts of UI benefits we have to consider those who were unemployed at the time of the first interview. From an analysis of this group we find:

- For those who receive UI benefits, the actual replacement rate (the ratio of current benefits to earnings in the lost job) provided by UI benefits is, on average, about ten percentage points above the usual statutory rate of 55 percent. It also varies significantly across claimants. There are a number of reasons why the actual replacement rate might diverge from the latter: some claimants receive the higher 'dependents' rate; insured earnings are not the same as earnings in the month before the job separation; high earners receiving the maximum UI benefit have lower replacement rates; the immediate tax treatment of earnings and benefits differ (even though the eventual tax implications are the same); pension and UI contributions are treated differently for earnings and UI benefits.

- Many unemployed respondents receiving UI report very little other personal income but for a significant proportion (40 percent) of those receiving UI, their personal income is reported to be at least double their UI benefit. Some of this is from earnings that are too low to reduce any UI benefit to zero.

- For about half of "single adult" households, household income comes mainly from UI benefits. For the other half, however, either there is no UI benefit or there are other significant sources of income than benefits.

- For married respondents with a spouse who was not employed at the interview date, UI benefit receipts are even less important; for only about one third does UI benefit constitute more than 75 percent of household income.

- For married respondents with a spouse who was employed at the interview date, UI is relatively unimportant; for only about 10 percent of these households does the UI benefit received constitute more than three quarters of household income.

3.2 Changes in total expenditures among the unemployed

An analysis of the changes in total expenditure for the those who were unemployed at the first interview reveal:

- Lone parents had a bigger fall in expenditure than any other group.

- Single people and married respondents who had a non-employed spouse had a larger fall than married respondents who had an employed spouse.

- Those who had an intervening job had a lower fall.

- Older respondents had a larger fall.
- High earners had a larger fall.

- Those who had some assets at the reference separation had lower falls.

3.3 UI benefit levels and expenditure changes

Finally, we relate changes in benefit levels to changes in total expenditure. Given the relatively weak link between benefits and personal income, personal income and household income (for married respondents) and changes in household income and changes in expenditures, the following findings come as no surprise:

- variations in the replacement rate do not seem to lead to variations in the change in total expenditure for married respondents;

- for single respondents and lone parents, there does seem to be some effect from UI benefits to expenditures but it is very small. We estimate that an increase of ten percentage points in the replacement rate would lead to an increase of only 0.7 percent in expenditures.

1. The Incidence of the Dependents' Rule

In this section we present an analysis of the incidence of the dependents' rule using the 1995 Canadian Out of Employment Panel (COEP) data. Under this rule, a claimant was entitled to a replacement rate of 60 percent (rather than 55 percent) if she or he is eligible for UI benefit and has some dependents and has low pre-separation (insurable) earnings. In the first wave of the 1995 COEP survey we have 5,178 respondents who received some UI benefit between the separation date and the first interview. Of these, 729 (or 14.1 percent) were eligible for the higher rate. Table 1.1 presents some details of the demographics for those who are eligible and those who are not.

... Under this rule, a claimant was entitled to a replacement rate of 60 percent (rather than 55 percent) if she or he is eligible for UI benefit and has some dependents and has low pre-separation (insurable) earnings.

The first split we look at is between men and women. From the numbers given in Table 1.1 we see that about one quarter of women receiving UI are eligible for the higher rate but only about 6 percent of men. This reflects both the lower average wage of women and their lower average hours of employment. The next panel of Table 1.1 presents statistics on the latter. As can be seen, 27 percent of respondents who had a part time job (defined less than 30 hours per week in a normal week) were eligible as against 12 percent for those who were in full time employment. Thus the new rule provides higher support for women and/or for part-time workers.

Table 1.1
Eligibility for Dependents' Rate by Demographic Group

	Non-missing	Sample Proportion	Proportion Eligible for Higher Rate
Female	5,178	41.8%	25.7%
Male		58.2%	5.7%
Part time	5,091	14.1%	27.3%
Full time		85.9%	11.9%
Atlantic	5,170	13.6%	18.0%
Quebec		34.4%	15.0%
Ontario		31.0%	11.9%
Prairies		11.8%	15.9%
B.C.		9.2%	9.2%
Single	5,043	15.1%	3.1%
Couple, no children		20.9%	3.4%
Lone Parent		3.4%	42.9%
Couple plus children		44.3%	24.1%
Other		16.4%	6.7%

The next panel of Table 1.1 breaks down eligibility by region. As can be seen eligibility rates for the higher benefit were higher in the Atlantic provinces and lowest in B.C.. Indeed, the proportion receiving the higher rate is twice as high in the Atlantic provinces as in B.C.. The final panel of Table 1.1 gives the breakdown of eligibility by family type. Although no one who does not have

dependents should be eligible we see that a small number of respondents who reported having no children ('single' and 'couple with no children' in the Table) in fact received the higher rate. This is almost certainly due to survey errors in family category classification. The major finding on family type is that over 40 percent of lone parents received the higher benefit. Since the rule did not take into account spousal income (if there was a spouse) this reflects the lower earnings of this group rather than their greater 'needs'. We also see that about one quarter of married respondents with children received the higher benefit.

Table 1.2 gives the breakdown of eligibility for the higher UI replacement rate according to some economic criteria. First, we consider eligibility for and receipt of Social Assistance (SA). This is of some importance since any increase in UI benefit for a household that is also receiving SA simply leads to a dollar-for-dollar decrease in SA benefit levels. Thus anyone who lives in a household that receives SA gets no effective extra benefit from receiving higher UI benefits (unless it lifts them out of the SA category altogether). Eligibility for SA depends on family composition, the province of residence and household income. For all households we can determine the level of income at which they become eligible for SA but for many households we do not have a survey measure of household income. Thus we can only consider 4,234 households in this part of the analysis. The first panel of Table 1.2 indicates that about 20 percent of those who are eligible for SA receive the higher benefit. For these respondents, the extra UI benefit makes no difference to net household income.

Table 1.2
Eligibility for Dependents' Rule by Economic Group

	Non-missing	Sample Proportion	Proportion Eligible
Eligible for SA	4,234	16.8%	19.9%
Not eligible for SA		83.2%	13.6%
Receiving SA	5,178	3.6%	28.7%
Not receiving SA		96.4%	13.5%
Income share <0.25	5,004	8.5%	21.4%
0.25< share <0.5		24.2%	23.6%
0.5< share <0.75		17.2%	14.7%
Income share >0.75		50.2%	8.3%
Married, spouse earning	3,281	67.0%	20.2%
Married, spouse not earning		33.0%	12.3%
Reported "hardship"	4,045	52.9%	15.9%
Reported "no hardship"		47.1%	12.1%

We also report results on the response to the survey question concerning receipt of SA. The latter gave very low participation rates for SA (only 3.6 percent report currently being on SA whereas our eligibility analysis suggests that 16.8 percent are actually eligible). As can be seen, almost 30 percent of those who report current receipt of SA receive the higher benefit. This reinforces the point made in the previous paragraph - although the dependents' rule is

providing extra benefit to some households who are 'in need' it does not increase their transfer income.

... significant numbers of those receiving the higher benefit did not 'need' it ... many recipients had an employed spouse who contributed substantially to household income.

The next panel of Table 1.2 follows up on the suggestion from Table 1.1 that because the dependents' rule only considered the respondent's income and not that of other household members, it may be transferring extra benefit to households that have high income anyway. To do this we use the survey question on the share of the respondent's pre-separation earnings in household income[1]. Earnings and household income may diverge either because the respondent has significant non-earned income or because other household members have some income. The ratio of pre-separation earnings to household income is broken up into four categories <0.25, 0.25-0.5, 0.5-0.75 and >0.75. As can be seen, higher benefits were received by over one fifth of households in which the respondent's earnings were less than half of household income. This once again reflects the emphasis of the dependents' rule on individual income rather than household income. Indeed, for many of the households that received the higher benefit, 'other' income is quite high and the household cannot be considered 'poor' by any definition. The fourth panel of Table 1.2 reinforces this point: a higher proportion of married unemployed people with employed spouses received the higher benefit (20 percent) than did those with a spouse with no earnings (12 percent).

The final panel of Table 1.2 gives the correlation with the survey question concerning whether the reference job separation lead to 'economic hardship'. Although the latter is somewhat imprecise, it is striking that 12 percent of those who reported 'no hardship' received the higher benefit and only 16 percent of those who experienced some hardship actually received the higher benefit.

The analysis above suggests that the dependents' rule failed in two respects:

- significant numbers of those receiving the higher benefit did not 'need' it. In particular, many recipients had an employed spouse who contributed substantially to household income.

- many low income households were either eligible for or receiving Social Assistance. For these households, the extra UI benefit did not lead to higher household income.

---

[1] Where this survey information is missing we have inputed values from information on the earnings and income of the respondent and spouse (if any) in the 1994 tax year.

2. *Living Standards After A Job Loss*

2.1 Who experienced hardship?

In this section we examine the impact of an unemployment spell on living standards. We restrict attention to a sub-sample of the full sample of 7,894 respondents. Specifically, we *drop* respondents who:

- were single people living with their parents or others (drop 1,686 respondents);
- reported that they quit or left their job for another job (drop 1,002 respondents);
- reported that they were not employed and they were not unemployed (drop 678 respondents).

The first selection excludes those who are less likely to provide reliable details of the household. The second selection excludes those who did not experience any unemployment spell or who quit. The final selection excludes those who were out of the labour force (because they had retired, were students etc.). The final sample size after these selections is 4,528 respondents.

In the 1995 COEP we have two basic measures of changes in living standards: a question on 'hardship' at some time following the job separation and a series of questions from which we can construct a measure in the 'change in total expenditure between the month before the ROE and interview 1'. These two indicators are not necessarily synonymous. For example, a respondent who experienced hardship and then found a good new job before interview 1 might respond that they experienced hardship but their total expenditure has increased since the pre-ROE month. Conversely, a respondent might report a fall in total expenditure but not feel that this is a 'hardship'. Together these two measures should provide us with basic information about what happens to living standards during an unemployment spell.

We consider first the hardship question. The survey question was:

"Has the loss of the job on [ROE date] been a financial hardship for your household?"

Note the question specifically refers to financial factors; it was not intended that this question should pick up wider (psychological or health) impacts

of becoming unemployed. The response rate for this question was a remarkable 99.6 percent - thus respondents found it easy to answer this question even if we, the investigators, find it difficult to interpret! Of those responding, 47.9 percent replied that they had *not* experienced any hardship. The remainder of this sub-section provides more detail about who did experience hardship.

We provide breakdowns along the following lines:

- the length of the unemployment spell;
- current job status;
- the importance of the respondent's income for the household in the pre-ROE period;
- the employment status of other household members;
- region;
- net assets at the ROE date;
- eligibility for UI.

For the first of these we categorise respondents according to whether they are currently employed or not. For the currently unemployed we distinguish between those who have been 'continuously unemployed' and those who have 'had an intervening job'. For the currently employed, we categorise according to the length of the first unemployment spell after the reference job separation, as given in Table 2.1. As can be seen, there is significantly less hardship for those respondents who experienced a short unemployment spell and a much higher rate for those who have been continuously unemployed. For all others (whether or not they have a current job) the proportion reporting hardship is fairly similar. Thus it seems that there is not much difference in this respect between those who are currently unemployed but have had an intervening job and those who are currently employed but had a medium unemployment spell. This is something we shall see again in the subsequent analysis.

Table 2.1
Hardship by Unemployment Experience

Current Employment Status	Spell Length	% in Category	% Reporting Hardship
Employed	<5 weeks	26.9	31.6
	5-15 weeks	17.8	50.8 [8.3]
	15-25 weeks	11.0	56.9 [9.4]
	>25 weeks	6.9	55.4 [7.4]
Unemployed	Some employment	19.0	58.9 [12.1]
	Continuous spell	18.5	74.1 [21.7]

Notes: The value in [ ] in the last column is the t-value for the test that the value is the same as for the first row. The sample size is 4,017.

The next categorisation is according to the current job status. Specifically, for those who are currently employed we have a survey measure of how

satisfactory the current job is compared with the ROE job. Combining this with the categories for the unemployed we have the categories given in Table 2.2. The pattern for this categorisation is less "tidy" than for the previous one. Although those who have been continuously unemployed still have the highest rate of hardship, the lowest rate is for those who are in a job that is about as good as the old. We conjecture that this is because the "new" job *is* often the old one and the recall was anticipated whereas those who have found a new, better job did so at the cost of some short run hardship.

Table 2.2
Hardship by Current Job Status

Current Employment Status	Job Satisfaction Compared to ROE Job	% in Category	% Reporting Hardship
Employed	More satisfied	24.1	45.0
	About the same	31.6	38.9 [3.1]
	Less satisfied	9.0	62.6 [6.1]
Unemployed	Some employment	17.9	58.9 [6.1]
	Continuous spell	17.4	74.1 [12.5]

Notes: See Table 2.1. The sample size is 4,256.

The next two sets of categories we consider concern the respondent's position in their household. The first of these is the "importance" of the respondent's earnings for the household in the pre-ROE period. We actually have three independent measures of this. First, in the survey we directly ask about how much the respondent's earnings contributed to household income in the month before the ROE. This is asked in the form of bands (0.75-1, 0.5-0.75, 0.25-0.5 and <0.25). We also have tax information for the previous year so that we can calculate a measure of importance by dividing the respondent's 1994 gross earnings by the gross income of the respondent and their spouse (if any) for 1994. Clearly these two measures differ in their timing, whether they use net or gross income concepts and also the latter excludes the earnings of other household members. Given the sample restrictions detailed at the start of this section the latter should not be too significant. The third measure is rather more indirect. We have survey information on "current household (net) income", "changes in the latter since the month before the ROE date" and "net earnings on the ROE job". Given the first two of these we can construct a (noisy) measure of pre-ROE household income and then a measure of importance from this and net earnings on the ROE job. We refer to the three measures as "the survey measure"; "the tax measure" and "the indirect measure" respectively. In this section we shall not look in any detail at how well these measures coincide; rather we shall simply record their correlations with the hardship variable.

Linear regressions of the hardship dummy on any of the measures of importance show a strong positive relationship between importance and

hardship. A linear regression of the hardship dummy on dummies for being in the four "survey" measure bands reveal that the significant distinction is between having brought in less than 25 percent of household income before the job separation (only 28 percent report hardship); having brought in between 25 percent and 75 percent (50 percent report hardship) and having brought in more than 75 percent of household income (58 percent report hardship). The latter group consists mainly single person households, lone parents and married couples of whom only the respondent had a job. Thus it is not surprising that when we consider family structure and spousal labour supply we find similar patterns, see Table 2.3. Thus married couples with the spouse employed at the ROE report the lowest rate of hardship whilst lone parents report the highest. Note, however, that the number of lone parent households in the sample is rather small and the proportion reporting is not significantly higher than for singles. Thus it is unclear whether the presence of children in non-couple households raises the probability of experiencing hardship.

Table 2.3
Hardship by Family Structure

Family Type	Percentage in Category	Percentage Reporting Hardship
Couples, spouse employed	54.2	47.1
Couples, spouse not employed	22.8	53.1 [3.2]
Singles	19.0	60.3 [6.6]
Lone Parents	4.0	71.7 [6.3]

Notes: See Table 2.1. The sample size is 4,338.

Another variable of interest is how hardship varies across regions. We shall not present the detailed results but we report that there are no significant differences between regions outside Quebec, but the hardship rate is significantly lower in Quebec (47 percent) than it is in the rest of the country (about 54 percent).

The next variable we consider is a constructed variable for "net assets (=assets-debts) at the job separation". Since this is constructed from a series of questions concerning current assets and debts and changes in these variables it is likely to be very noisy. Consequently, we use only derived categorical variables for having had negative, zero or positive. Moreover, the response rate for the questions used in the construction of the net assets variable is lower than elsewhere so that the usable sample is only 3,575 respondents. Results are given in Table 2.4. As can be seen, households that had negative net assets at the job separation reported a much higher rate for hardship than households that were not in debt.

Table 2.4
Hardship by Assets at Separation Date

Net Asset Category	Percentage in Category	Percentage Reporting Hardship
Negative	37.9	60.3 [4.1]
Zero	15.3	50.2
Positive	46.8	45.2 [2.0]

Notes: See Table 2.1. The sample size is 3,575.

Finally we consider the interaction between hardship and UI receipt. To do this we consider only those respondents who are currently unemployed (that is, those who self-report not being employed). Although the hardship rate amongst the group who receive UI benefit is higher (68 percent) than amongst those who do not receive benefit (64 percent), the difference is not very significant statistically so it preferable to conclude that UI receipt is uncorrelated with reporting hardship. One possible explanation for this is that those who do not feel any hardship are less likely to apply for UI. Alternatively, it could be that the non-recipients are not eligible because they have low labour force attachments and do not accumulate qualifying weeks. In the latter case, the loss of the job may be less of a hardship than for other workers. We shall return to an analysis of living standards (as measured by changes in total expenditure) and UI benefit receipt below.

Table 2.5
Hardship Regression

Variable	Coefficient	t-value
Constant	31.2	-
Atlantic region	-2.2	0.6
Quebec	-4.8	1.5
Ontario	2.2	0.7
Prairies	6.2	1.7
5-15 weeks of unemployment	19.0	7.4
15-25 weeks of unemployment	24.9	9.2
Employed now, >25 weeks unemployment	24.2	6.7
Unemployed now, some employment	26.8	9.2
Continuous spell of unemployment	41.7	14.2
Negative net assets at ROE	8.4	3.3
Positive net assets at ROE	-5.8	2.3
Employed in unsatisfactory job	16.6	5.0
Employed in good job	-4.1	1.8
Importance <0.25	-23.7	6.0
0.25 ≤ Importance <0.5	-2.0	0.8
0.5 ≤ Importance <0.75	-3.8	1.5
Married, spouse not employed	4.0	1.7
Single	8.2	3.3
Lone Parent	20.3	4.7

Notes: Sample size is 2,988. The dependent variable is a dummy variable for reporting 'hardship'.

Respondents are more likely to report hardship if ... the respondent has an extended spell of unemployment ... the household has zero or negative net assets at the job loss, the respondent is single or is a lone parent.

Up until now we have examined possible correlates with hardship one at a time. It is clear, however, that some of them may simply be proxying for some other variables. Thus we round off this sub-section with a multiple regression analysis that puts all of the factors considered above (except for UI receipt) on the right hand side. Table 2.5 presents the detailed results. One thing to note is that many of the variables below are missing from the data set for some observations so we can only use 2,988 observations in this regression.

This regression reveals that most of the effects found in the simple regression analysis above hold even when we control for other (correlated) effects. The main results can summarized as follows.

Respondents are more likely to report hardship if:

- the respondent has an extended spell of unemployment (over 5 weeks). In particular, three quarters of those who were unemployed continuously between the separation date and the interview date (an average period of nine months) report hardship;
- the household has zero or negative net assets at the job loss;
- at the interview date, the respondent has an unsatisfactory job (as compared with the ROE job);
- the respondent brought in a high fraction of household income before the job separation. In particular, those who accounted for less than 25 percent of household income before the job separation were very unlikely to report hardship;
- the respondent is single or is a lone parent.

2.2 Changes in income and total expenditure

As discussed above, we can also use the survey measure of changes in total expenditure to analyse who suffers a significant fall in living standard during an unemployment spell and how this is affected by UI benefit levels. The total "expenditure change" question in the survey is:

"About how much did you and your household spend on everything in the past month (with a prompt suggesting items such as mortgage, rent, groceries etc.)?"

This is immediately followed by a series of questions designed to elicit how much this changed from the month before the ROE to the month before the

interview. The series of questions are (these are paraphrases):

- Has total expenditure gone down?
- If "yes" - by how much?
- If "no" - has total expenditure gone up?
- If "yes" - by how much?

From this information we calculate a change variable which is set to zero if the respondent answers 'no' to both change questions.

The response rate for the change questions was very good: we can construct a change variable for 3,928 respondents in our sub-sample of 4,528; this represents an 87 percent response rate. Of those reporting, 22.8 percent report a fall, 41.7 percent report "no change" and 35.5 percent report a rise; much of the rest of this report will be concerned with a detailed breakdown of these numbers. Initially, however, we note that the number reporting "no change" seems implausibly high. Detailed analysis of the distribution of changes (not presented here) suggests that some of this is respondents not reporting small values ("rounding to zero"). This is not a very serious problem – if the true change was $20 and we record zero, nothing of importance is lost.

It does not seem, however, that all of the zeros can be accounted for in this way. Also of concern is that too many respondents report large *positive* changes when their circumstances seem to make this unlikely. We shall return to this below; for now we shall take the "change in total expenditure" responses as given.

Before giving an analysis of who cut total expenditure we give the relationship of the latter with the "hardship" measure discussed in the last subsection. As discussed at the beginning of that subsection it may be that respondents experienced hardship but are now back in good, secure jobs and also report a rise in total expenditure; thus we present results according to the respondent's employment status at the first interview. In Table 2.6 we report the basic statistics for this variable and its relationship to the "hardship" variable used above. As we would expect, those who had falls in total expenditure are more likely to report hardship than those who reported no change or an increase. On the other hand, the finding that 66.5 percent of the unemployed who reported rises in total expenditure also reported hardship is distinctly surprising. We cannot think of any explanation for this.

Table 2.6
Hardship and Changes in Expenditures

	Currently Unemployed		Currently Employed	
Total expenditure	Percentage in Category	% Reporting Hardship	Percentage in Category	% Reporting Hardship
Fell	34.3	72.6 [4.6]	17.3	60.8 [9.3]
Stayed same	39.6	58.2	42.6	35.7
Rose	26.2	66.5 [2.5]	40.1	45.5 [4.7]
Sample size	1,277		2,638	

Notes: See Table 2.1.

An alternative to using a measure of whether total expenditure rose or fell is to use the proportional change in total expenditure. This takes account of the fact that large proportional changes in total expenditure are more likely to be associated with a report of hardship. A regression of the hardship dummy on the proportional change in total expenditure gives a statistically significant but small negative relationship for both the currently employed and the unemployed. For the latter group, a fall of 10 percent in total expenditure is predicted to lead to a rise of only 0.02 percentage points in the probability of reporting hardship.

From this analysis we conclude that the two measures of changes in living standards that we have are positively correlated but not strongly. Thus the two measures give information about different aspects of the change in living standards. In all the subsequent analysis we shall concentrate on the change in total expenditure.

The next set of results we present concern the relationship between changes in household income and changes in total expenditure. Much of the popular discussion of living standards during an unemployment spell takes it as given that these two changes are identical. Thus it is often implicitly assumed that changes in UI benefits would lead directly to equivalent changes in expenditures. This ignores the possibility of saving or dissaving and/or borrowing. Clearly, if agents can "smooth" total expenditures over a short run income loss then we may observe smaller changes in total expenditure than in income. We shall provide a detailed analysis of income changes for the currently unemployed in the next section; here we consider all respondents and present a more basic analysis of the relationship between income changes and total expenditure changes.

The "income change" measure is derived from survey questions that are very similar to those for total expenditure. First the respondent is asked about current household income and then immediately asked about changes in this from the month before the ROE date (in exactly the same way as detailed above for total expenditures). Once again we have an excellent

response rate of 90 percent. The proportion reporting falls, no change and an increase are 44.3 percent, 35.6 percent and 20.1 percent respectively. As before, many of the zeros are due to rounding; in a later section we shall compare these responses with other measures of income changes to assess their reliability.

We first present results on the distributions of income changes and total expenditure changes by current job status, using the categorisation given in Table 2.2. In Table 2.7 we present proportional changes in income and expenditures for the first quartile (25 percent), the median (50 percent) and the third quartile (75 percent). The first thing to note about these distributions is that as we go down any column the values generally do not rise. Thus those who have been continuously unemployed reported a median fall of 20 percent in household income as against "no change" for those who are now in jobs at least as good as the ROE job. The second notable feature of this Table is that almost always the expenditure change is higher than the income change. Thus the median income change for the continuously unemployed is -20 percent but the median change in expenditure is zero. Thus households do *not* reduce expenditures by anything like the change in income. To put it another way, this Table provides strong evidence that households can insulate themselves from income changes (at least over a nine months spell); that is, that households "smooth consumption".

Before discussing the differences between groups in Table 2.7 we present formal statistical tests of whether the distributions are statistically different to be sure that any "eyeball" examination of Table 2.7 is not leading us astray. To do this we use the Wilcoxon rank sum test. This gives a test statistic that is distributed as a $\chi^2(1)$ if the two distributions are the same; thus large values of the test statistic imply that the distributions are different. We test only between contiguous categories since the continuously unemployed, say, are obviously different from the employed in both changes; a formal Kruskal-Wallis test for all the income change (respectively, expenditure change) distributions being the same has a $\chi^2(4)$ value of 702 (respectively, 191) so we can be quite confident that the distributions are not all equal. The results for the comparisons of adjacent distributions are presented in Table 2.8. Values of above about eight indicate that the two distributions are different (a significance level of 1 percent). Thus we see that for income all the distributions are different from each other; typically each group has a smaller income change than the group "above it". Note that this means that the currently unemployed who have had an intervening job have a smaller income fall than those who were continuously unemployed between the separation date and the first interview. For expenditure, those currently employed in an unsatisfactory job are not different from those who are currently unemployed but had an intervening job. The latter, however, are very different from those who have been continuously unemployed. One possible explanation for this is that there is a group of unemployed who take low quality temporary jobs during a protracted spell of

being out of "good" employment. It is a matter of chance whether they are in employment at the interview date; if they are, then their income is higher but their expenditure is no different to those in the same group who are currently out of work. The latter follows since in the "long run" (which will be what determines expenditures if households can borrow or dissave) those who take short term unsatisfactory jobs smooth consumption over spells of work at these jobs and unemployment. This is clearly an area that merits further investigation in future work.

Table 2.7
Proportional Changes in Income and Expenditure

Current Employment Status	Income Changes				Expenditure Changes			
	Sample	25%	50%	75%	Sample	25%	50%	75%
Employed, more satisfied	872	-3.8	0	14.3	884	0	0	11.5
Employed, as good	1,105	-2.4	0	0	1,106	0	0	6.3
Employed, less satisfied	324	-24.2	-6.8	0	320	-6.6	0	6.1
Unemployed, Intervening Job	639	-34.8	-14.3	0	631	-6.3	0	3.6
Continuously unemployed	586	-37.5	-20.0	0	592	-16.7	0	0

The analysis above gives some idea of the distributions of the change variables. We can also look at how the changes are correlated within particular households. In Table 2.9 we give the cross-tabulation for positive and negative income and changes. If income and expenditure changes were the same then we would see only entries in the diagonal of Table 2.9. Instead, only 53 percent of respondents are on the diagonal; the rest report a different income change category to the expenditure change category. Of these, relatively few report a non-negative income change and a negative expenditure change or a positive income change and a zero expenditure change (the "upper triangle" of Table 2.9).

Table 2.8
Tests for the Equality of Distributions

Current Employment Status	Income Changes	Expenditure Changes
Employed, more satisfied	50.4	9.2
Employed, as good	66.1	6.4
Employed, less satisfied	17.7	2.3
Unemployed, intervening job	13.8	26.4
Continuously unemployed	-	-

Notes: In each case the $\chi^2(1)$ statistic given is for the equality of the distribution with the group immediately below.

Table 2.9
Income and Expenditure Categories

Expenditure Change	Income Change		
	Negative	Zero	Positive
Negative	16.8	4.0	2.2
Zero	13.2	22.5	6.0
Positive	11.7	10.2	13.4

Notes: Values given are proportion in cell. Sample size is 3,714.

Expenditure changes are largest for those who were continuously unemployed between the reference job separation and the first interview.

In Table 2.10 we present the estimates from a regression of proportional expenditure changes on proportional income changes, allowing for variation across job categories. As can be seen, those who have been continuously unemployed have a significantly higher mean fall (7.7 percent) in expenditure than any other group. The currently unemployed also have a much lower "response" to income changes than the "employed, more satisfied" group: about 0.16 (the sum of the coefficient on the income change for the reference group (0.28) and the coefficient for the unemployed group (about -0.12)) as against 0.28. This suggests that expenditure is more responsive to increases in income than it is to decreases; a full investigation of this hypothesis is beyond this study but this is another area that merits further investigation.

Table 2.10
Regression of Proportional Expenditure Changes

Job Category	Intercept	Coefficient on Income Change
Employed, more satisfied	5.47 [7.2]	0.28 [11.8]
Employed, as good	-0.11* [0.1]	-0.12* [2.9]
Employed, less satisfied	0.63* [0.4]	0.12* [2.0]
Unemployed, intervening job	-2.17* [1.7]	-0.11* [3.0]
Unemployed, no intervening job	-7.70* [5.3]	-0.13* [3.0]

Notes: t-values in brackets. Sample size =3,156
*indicates deviation from first group

Summarising the main findings of this sub-section we have:

- Although changes in total household expenditures are correlated with the reporting of "hardship" the two measures are by no means the same.
- Expenditure changes are not generally equal to household income changes. Although expenditure changes are positively correlated with income changes the former are generally smaller than the latter.
- Expenditure changes are largest for those who were continuously unemployed between the reference job separation and the first interview.

- The relationship between income changes and expenditure changes was stronger for those who were employed in jobs at least as good as the reference job and weakest for the currently unemployed.

- There seems to be a group of people who have short jobs during a protracted spell of non-participation in a steady job. For this group expenditure changes are much the same whether or not they are in employment.

All of the above is rather general; we turn now to a much more detailed examination of living standards for those respondents who were unemployed at the first interview.

3. *Living Standards of the Unemployed*

3.1 Personal and household income

In this section we restrict attention to those respondents who reported that their job separation was not because of a quit and who self-report as being unemployed at the interview date. Starting from the sample used above (see the beginning of the previous section for the sample selection) we retain 1,504 respondents. In this subsection we concentrate on the level of their (net of tax) personal and household income and its relationship to any UI benefits received. Before moving to this we note the obvious but extremely important fact that this sub-sample is highly selected. That is, of the 4,528 respondents who might have been in our sample (see the beginning of section 2) we have only 1,504 who self-report that they are unemployed at the interview date. The analysis given below should not be extrapolated to what would have happened to the two thirds of our "useful" sample who are employed.

We have three sources of information on the UI benefit the respondent receives. The first is from information from administrative data (the "status vector") that allows us to determine whether the respondent started a UI claim after the ROE job loss and whether that claim is long enough to still be operative at the first interview date. In the event that more than one benefit period was started between the reference separation date and the first interview, we take the last claim before the interview. The second source of information is the survey questions on having received UI benefit during the current spell or at the interview. The final source is from the "benefits trailer" file which has exact details of UI payments that can be matched to the interview date. In Table 3.1 we give the cross-tabulation for the first two measures with the latter. It will be seen that although the status vector and survey measures are largely in agreement with the benefits trailer information (most are on the diagonal) there are some differences. According to the benefits trailer measure, the proportion of our sample that are on claim is 66 percent (60 percent for the status vector measure and 62 percent for the self-reported measure); the remainder either are ineligible, have exhausted benefit or are eligible but not receiving benefit.

Table 3.1
A Comparison of Different "On Claim" Measures

Benefit Trailer Measure	Status Vector Measure		Survey Measure	
	Not on Claim	On Claim	Not on Claim	On Claim
Not on Claim	28.9	5.1	26.1	7.9
On Claim	11.4	54.6	11.9	54.1

Note: Values given are proportions in cells. Sample size is 1,504.

As well as using the information about being on claim, we shall also use the level of benefit paid. Since this is subject to tax withholding we multiply the status vector measure value (which is a measure of gross benefit) by a measure of the average tax rate recorded in the 1995 tax data. The benefit trailer measure is net of tax so no adjustment is necessary for it. Finally, we set the benefit level to zero if the respondent is not on claim (according to the relevant measure). Table 3.2 presents the distribution of benefits according to the two measures and the distribution of personal income (in dollars per month); the latter will be discussed below. The median benefit received amongst those receiving benefit was $641 per month (for the benefit trailer measure; $710 for the status vector measure). The two measures of benefit are similar but there are systematic differences. For example, the benefit trailer measure is higher at the top end but also has many more low values ($100 per month or less) than the status vector measure. Sometimes these differences make a difference in the analysis below so we generally present results for both measures.

Table 3.2
Distribution of Benefits and Personal Income

	UI Benefit ($/month)		Personal Income ($/month)
Percentile	Benefit Trailer	Status Vector	
25	0	0	600
50	641	710	1,000
75	1,182	1,232	1,400
90	1,656	1,497	2,000
95	1,845	1,574	2,660
Sample Size	1,504	1,504	1,441

A critical value in the working of any UI system is the *replacement rate*. The statutory rate in the period under consideration was 55 percent with a higher rate of 60 percent for low earning individuals with dependents (see the first section above). The actual replacement rate - defined as net UI benefit received divided by "take home pay" on the lost job - may diverge from this for a number of reasons:

- there is a maximum level of benefits payable. Anyone with pre-separation earnings of above about $3,500 per month receives the maximum rate which then gives a lower actual replacement rate;

- the benefit paid is based on (gross) "insurable earnings" in the 20 weeks before the job loss. This may diverge from actual earnings in the month before the job loss;

- the benefit paid is based on gross earnings and is then subject to tax withholding. If the tax rate used for this is less than the tax rate used to withhold taxes on earnings then the benefit received will exceed 55 percent of take home pay in the lost job.

- closely related to the above is the fact that the difference between gross earnings and take-home pay is generally greater than taxes paid since there are other deductions from pay (for example, pension and UI contributions). For this reason net UI benefits will generally exceed 55 percent of take home pay in the lost job.

In Table 3.3 we give the distribution of the actual replacement rate for our sample of unemployed respondents who receive UI benefits. What is striking about this Table is that for both measures more than half of our sample have replacement rates above the highest statutory rate of 60 percent. Indeed, about one quarter of the sample have replacement rates of above about 75 percent. For these latter, the income loss associated with the job loss is only one quarter of income and not the nearly one half that is suggested by the statutory rate.

Table 3.3
Distribution of Actual Replacement Rate

	Replacement Rate	
Percentile	Status Vector Measure	Benefit Trailer Measure
5	39.2%	15.1%
10	44.8%	24.3%
25	54.4%	42.1%
50	64.7%	62.3%
75	72.4%	79.0%
90	82.4%	92.5%
95	92.2%	109.0%
Sample Size	897	993

We turn now to personal income. Of the 1,441 respondents who gave their personal income, 146 reported zero and the rest positive amounts. The distribution of personal income is given in the final column of Table 3.2. Our first investigation is into how this varies with any UI benefit received. Table 3.4 presents, for each of our three "on claim" variables, the

distribution of personal income for those receiving benefit and those who do not. The first thing to note is that the three "on claim" columns are similar to each other and so are the three "not on claim" columns. The only significant differences are that those who self-report not having a claim are more likely to report very low personal incomes. Thus we need only consider one indicator for being a claimant; we take the first two columns that use the benefit trailer measure. As can be seen, as we would expect more non-claimants report zero or low income than do claimants *but* the medians are not too different and non-claimants have higher personal incomes at the top end of the distribution. The latter is somewhat surprising given that these respondents report being unemployed and they are not receiving UI benefits. Note, as well, that the same finding is true for the self-reported measure of being "on claim" so this is probably not due to a misclassification of respondents to the claim group. Two possible explanations suggest themselves. First, those respondents who report high personal incomes are eligible for UI benefits but choose not to take them. The second possibility is that these respondents are, in fact, in employment even though they self-reported being unemployed at the time of the survey. The latter could come about if the job is considered temporary but earnings are high enough to disqualify the respondent for UI. With the data currently to hand it is not possible to investigate this any further here, but it is an area that deserves more investigation.

Table 3.4
Distribution of Personal Income

	Benefit Trailer		Status Vector		Self-Reported	
Percentile	On Claim	Not on Claim	On Claim	Not on Claim	On Claim	Not on Claim
5	180	0	200	0	460	0
10	464	0	500	0	592	0
25	725	72	740	205	800	1
50	1.024	800	1.056	828	1.088	700
75	1.400	1.436	1.436	1.322	1.400	1.436
90	1.900	2.400	2.000	2.069	1.850	2.400
95	2.400	3.000	2.500	2.800	2.400	3.000
Sample Size	954	487	865	576	897	541

As well as the usually defined replacement rate, it is also of interest to ask how much of personal income of the unemployed is accounted for by UI benefits. This addresses most directly the question of how changes in benefit levels would impact on current incomes than the replacement measure which compares UI benefits to earnings in the lost job. For many of those who are "on claim" we find that UI benefits account for most of personal income but this is by no means universal. For claimants the median personal income is $1,024 (see Table 3.4). This, however, masks some significant differences. For example, about 14 percent of our sample report personal income that is

less than 75 percent of the benefit we impute to them using the administrative data; this has to signal some error since personal income should always exceed the net of tax benefit paid. A further 40 percent of claimants report personal income that is between 75 percent of benefit and twice the benefit; for this group the benefit paid is the major source of personal income. However, 46 percent of claimants who report personal income indicate that it is at least twice as much as the UI benefit received. This is a surprisingly high percentage. This reinforces the conjecture made above that many respondents who receive benefit and consider themselves unemployed are in fact in some sort of job. The pay from the latter reduces any benefit received but it may not drive it to zero. This would lead to low benefits (since there is a deduction for earnings above a threshold) and higher personal income and hence to a low share of UI benefits in personal income.

Turning to household income, we have two responses that we can use: the survey measures of the current level and the change in this since the job separation (see section 2.2 above). We shall report more results on the changes in the next section; here we concentrate on the levels variable. We know that 1,330 respondents report this; the median (mean) reported is $1,600 ($1,883). Thus on average, the amount of household income that is not from the respondent ("other household income") equals about $600 (the difference between this median and the median reported for personal income in Table 3.2. Of course, this is very skewed distributed; single person and lone parent households have household income equal to personal income and some married respondents have spouses who have high incomes. To investigate this, we examine the relationship between UI benefits and household income for different types of households. This will be helpful when we come to consider the relationship between UI replacement ratios and living standards. Specifically, we consider the categorisation given in Table 2.3. In Table 3.5 we present the proportion of household income that comes from UI benefit, by family type.

Table 3.5
UI Receipt by Family Structure

	Sample Size	Benefit / (Household Income)		
		0	>0, <0.75	>0.75
Couples, spouse employed	600	39.0	52.0	9.0
Couples, spouse not employed	351	33.1	37.0	29.9
Singles	307	35.5	16.0	48.5
Lone Parents	57	36.8	22.8	40.4

Note: Values given are proportion in row.

The first thing to note is that the figures in the "zero benefit" column are all rather similar. That is, receipt of UI does not vary greatly across family types.

The replacement rate varies significantly across claimants.

Statistical tests (not reported) confirm that there are no significant differences. There is, however, substantial variation down the next two columns. Just as we would expect, UI benefits, when they are received, constitute a major part of income for singles and lone parents. Conversely, households in which there is another earner rely less on UI benefits. The surprise in the Table is that respondents with a spouse who is not employed are so different form "single adult" households. The obvious differences between this group and both "couples with an employed spouse" and "single adults" are statistically significant. One possible explanation is that married couples have higher assets or other government transfers than "single adult" households.

In this sub-section we have considered personal and household income and their relationship with UI benefit receipt. For our sub-sample of respondents who did not quit their reference job (that is, those who suffered an "involuntary" job separation) and who self-report that they are currently unemployed, the major findings are:

- For those who receive UI benefits, the actual replacement rate (the ratio of current benefits to earnings in the lost job) provided by UI benefits is, on average, about ten percentage points above the usual statutory rate of 55 percent.

- The replacement rate varies significantly across claimants.

- Many unemployed respondents receiving UI report very little other personal income but a significant proportion (40 percent) of those receiving UI report personal income that is at least double their UI benefit.

Many of the unemployed respondents who are not receiving UI report quite high personal incomes.

- Many of the unemployed respondents who are not receiving UI report quite high personal incomes.

- For about half of "single adult" households, household income comes mainly from UI benefits. For the other half, however, either there is no UI benefit or there are other significant sources of income than benefits.

- For married respondents with a spouse who was not employed at the interview date, UI benefit receipts are even less important; for only about one third does UI benefit constitute more than 75 percent of household income.

- For married respondents with a spouse who was employed at the interview date, UI is relatively unimportant; for only about 10 percent of these households does the UI benefit received constitute more than three quarters of household income.

This concludes our investigation of personal and household incomes for those currently unemployed. We turn now to a detailed analysis of who amongst the currently unemployed experienced a large fall in total expenditure.

3.2 Changes in total expenditures among the unemployed

In this section we extend the analysis of section 2.2 to give a detailed picture of exactly who reduces total expenditure. The sub-sample we use is the same as the last sub-section, that is, those who did not quit their job and who report that they are currently unemployed. Of this sample of 1,504 respondents we have 1,279 who report a measure of the change in total expenditure from before the reference job separation to the first interview. We restrict attention to this sub-group in all that follows. We begin by comparing the difference between UI benefits received and earnings in the separation job and changes in household income and household expenditures. The former difference, which we somewhat inaccurately term the "change in earnings", is used as a partial proxy for changes in personal income which were not asked for in the survey. Note, however, that this measure of 'changes in earnings' excludes any changes in other income. For example, it will overestimate the fall in personal income for respondents who have some earnings but also receive UI.

In Table 3.6 we present the reported distribution of these changes for the 1,279 households who responded to the "changes in total expenditure" question. We also break down the distributions according to family type, grouping singles and lone parents into one ("single adult") category. There are many notable features of the distributions presented here:

- First, note that the "change in earnings" rows are very similar across all three family types. Thus there do not seem to be substantial differences between the earnings loss that comes from a job separation for the three groups.

- Second, for all family types the reported falls in household income are much smaller than the change in "own income". There are two possible explanations for this. First, it may be that the actual change in household income is equal to the loss of earnings due to a job loss but respondents under-report the fall in household income. The alternative is that households find ways to replace the difference between the lost earnings and any UI benefits received. For example, note there is a large difference between earnings and household income falls for respondents who have a large earnings fall and have an employed spouse. This suggests that large losses can be partially made up by the spouse increasing his or her earnings.

That we also see smaller falls in household income than in earnings for single adult families (for whom personal and household income are the same) suggests that respondents can also partially offset their own earnings losses, perhaps by increased transfers (for example, Social Assistance) or by having some small amount of employment income, either from self-employment or from a job that does not lead the respondent to categorise themselves as "employed".

- Finally, we see that for all groups expenditure falls are much smaller than income falls (and, in fact, we even have some expenditure rises). Indeed, the difference between the expenditure fall distribution and the earnings fall distribution is quite remarkable. For example, the median earnings loss is about $900 per month but the median expenditure change is zero. Note as well, that the differences between the income changes and the expenditure changes are much more marked at the bottom end of each distribution. As well as the changes in other income discussed in the paragraphs above, the obvious explanation here is that households are running down assets or running up debts. It should also be remembered from the analysis above that about three quarters of respondents who were continuously unemployed reported that the separation had lead to economic hardship. The results here suggest that this is not synonymous with cuts in monthly expenditures.

Table 3.6
Distribution of Reported Changes

	Sample Size	Change	Percentile				
			10	25	50	75	90
All	1,279	Earnings	-2,530	-1,638	-912	-460	-245
		Hhold income	-1,600	-900	-400	0	0
		Expenditures	-500	-200	0	14	200
Married, spouse employed	577	Earnings	-2,445	-1,638	-920	-463	-266
		Hhold income	-200	-100	-400	0	0
		Expenditures	-500	-200	0	20	200
Married, spouse not employed	316	Earnings	-2,580	-1,720	-950	-445	-226
		Hhold income	-1,500	-1,000	-400	0	0
		Expenditures	-500	-100	0	33	200
Single adult	386	Earnings	-2,451	-1,563	-862	-460	-249
		Hhold income	-1,400	-700	-200	0	0
		Expenditures	-500	-200	0	0	200

Note: "Earnings Change" equals UI benefit minus earnings in reference job.

All of this suggests that the link:

UI benefit → personal income → household income → household expenditure

is a much more complicated one than is suggested by widely used analyses which implicitly equate changes in UI benefits with changes in consumption (and household welfare). In fact, this analysis suggests that many households manage to cope with a large earnings loss without cutting expenditures. Once again we reiterate as strongly as possible that it is most important not to misinterpret this. The group who are unemployed nine months after the reference job separation are a highly selected group. It may well be that it is only those who can find ways to insulate themselves from large earnings losses for such a long period who can "afford" to have a long spell of unemployment. The latter may have a long run payoff if the result is more job search and a better match in any new job. A systematic investigation of this would require a joint model of unemployment duration, household labour supply, saving and consumption which would take us too far from the present concerns, but this is a very important area for future study.

We turn now to an analysis of who experiences changes in expenditure. To do this we consider proportional changes rather than the levels presented in the Table above. As seen from the latter, the median proportional change is zero and the mean proportional change is only -2.5 percent. In Table 3.7 we present mean expenditure changes according to different characteristics of the respondent. We shall only comment here on the "significant" differences. The strongest effect is for having had an intervening job since the reference job loss. As can be seen, those who had an intervening job report no change (on average) whereas those who were continuously unemployed had an average fall of 5 percent. Another strong effect is for family type: lone parents report a much larger fall (-10.6 percent) than any other group. Despite the small number of such households in our sample, the effect is still quite strong statistically. We also see that tenure in the reference job makes a significant difference. Those who separated from long tenure jobs had a larger fall than those who separated from a short tenure job. The control for seasonality gives much the same picture. This suggests that the loss of a long tenure job is a bigger shock and leads to a larger revision in consumption than the loss of, say, a seasonal job. Finally we have that consumption falls were smaller in the Atlantic provinces and the Prairies.

Table 3.7
Means of Proportional Expenditure Changes

Variable	Number	Means (%)	t-value
Female	416	-2.9	-
Male	803	-2.2	0.5
Not regular UI user	443	-5.1	-
Regular UI user	670	-0.8	3.4
Non-seasonal reference job	1,065	-2.9	-
Seasonal reference job	154	1.0	2.1
Short tenure in reference job	548	-0.3	-
Long tenure in reference job	670	-4.1	3.0
Continuously unemployed	590	-5.4	-
Some intervening job	629	0.4	4.7
Renter	473	-4.0	-
Home owner	746	-1.4	2.0
Married, spouse employed	541	-1.1	-
Married, spouse not employed	3,301	-2.0	0.5
Single	272	-4.0	1.8
Lone Parent	47	-10.6	2.9
Not credit constrained	1,141	-2.4	-
Credit constrained	65	-1.7	0.2
Could not borrow	344	-3.5	-
Could borrow	839	-1.9	1.1
Less than high school	398	-1.4	-
High school	550	-3.5	1.5
More than high school	271	-1.7	0.2
Atlantic region	189	2.0	2.7
Quebec	444	-5.0	0.9
Ontario	297	-3.5	-
Prairies	162	0.8	2.0
B.C.	125	-1.6	0.8
Not visible minority	966	-3.0	-
Visible minority	253	-0.3	1.7

Note: Dependent variable is proportional change in total expenditures.

Table 3.8 gives similar analysis for continuous variables. Of these, only earnings in the pre-interview year and "importance" (in its tax variant) lead to significant variation in total expenditure. Higher earners had larger expenditure falls; this is consistent with the job loss being a greater shock for them (see the last paragraph on long tenure). As discussed above (see after Table 2.2) we have three measures of how important the respondent's income was for the household before the job separation. Of these only the tax measure shows any significant effect and suggests that households in which the respondent was the "primary" earner make a larger adjustment downwards. Of course, in a simple regression framework such as that presented here, any particular effect could be proxying for some other effect; for example, the smaller fall for the Atlantic provinces could be because more of the references jobs there were seasonal. To control for this we need to run a multiple regression - see Table 3.9.

Table 3.8
Regression Coefficients for Proportional Expenditure Changes

Variable	Number	Coefficient	t-value
Change is spouse's hours	834	-.07	1.7
Net assets at separation	992	.05	1.3
Weeks elapsed	1,219	-0.23	1.3
Local unemployed rate	1,178	0.28	1.6
Log reference job net earnings	1,219	-0.43	0.4
Log 1994 net earnings	1,219	-2.49	2.5
Importance, direct measure	1,207	-1.12	0.4
Importance, constructed from survey data	1,085	0.68	0.3
Importance, constructed from tax data	1,039	-6.0	2.8
Age (in decades)	1,219	-1.07	1.8
Proportion of income committed	1,076	-1.27	0.8
Log household size	1,219	1.58	1.4

Note: see notes to Table 3.7.

Table 3.9
Multiple Regression Coefficients

Variable	Coefficient	t-value
Constant	-0.05	0.0
Male	0.85	0.4
Regular UI user	3.20	1.6
Seasonal reference job	1.68	0.7
Long tenure in reference job	-1.31	0.8
Some intervening job	3.42	2.1
Homeowner	3.03	1.6
Married, spouse not employed	-5.05	2.2
Single	-6.08	1.6
Lone parent	-13.66	3.4
High school	-1.32	0.7
More than high school	0.83	0.4
Atlantic region	1.16	0.4
Quebec	-2.16	1.0
Prairies	4.15	1.6
BC	3.37	1.2
Visible minority	3.07	1.6
Log household size	0.44	0.2
Age (decades)	-2.40	2.8
Reference job earnings	-	F(3,1039) = 1.93
Respondent's earnings in last 3 years	-	F(3,1039) = 0.44
Joint earnings in last 3 years	-	F(3,1039) = 2.25
Local unemployment rate	0.35	1.4
Weeks elapsed	-0.17	0.7
Importance, direct measure	2.81	0.6
Credit constrained	1.65	0.5
Could borrow	1.33	0.8
Assets at job separation	0.09	2.0
Debts at job separation	0.01	0.0

Note: See notes to Table 3.7. Sample size is 846.

As we might expect, the results change somewhat when we consider all variables together. For example, neither of "seasonal" nor "long tenure" are individually significant, presumably because each is co-linear with the other. The basic findings from this analysis are that for those who are unemployed at the first interview:

... lone parents have a bigger fall in expenditure than any other group

- lone parents have a bigger fall in expenditure than any other group;
- single people and married respondents who have a non-employed spouse have a larger fall than married respondents who have an employed spouse;
- those who have had an intervening job have a lower fall;
- older respondents have a larger fall;
- high earners had a larger fall;
- those who had some assets at the reference separation had lower falls.

Many of these responses are consistent but some may be picking up the effect of UI benefits. For example, high earners have a lower replacement rate since UI benefits are capped. Thus it may be that the larger fall for high earners is because the loss of job represented a bigger "permanent" shock or because it represents a bigger temporary fall in income. We turn now to an analysis of how UI benefits impact on expenditure changes.

3.3 UI benefit levels and expenditure changes

We round off our investigation with a consideration of how UI benefits impact on changes in total expenditure. In the sub-section before the last one we saw that the link from benefit levels to personal income to household income to expenditures was relatively weak in each link of the chain, particularly for married respondents. Thus we expect to see at most a weak direct link between benefit levels and expenditure changes.

To examine how benefits and statutory replacement rates impact on expenditure changes we would ideally assign different replacement rates to claimants randomly. Then we could regress proportional expenditure changes on replacement rates and simply take the coefficient on the latter as our measure of the impact of the replacement rate on expenditure. Ignoring for the moment that replacement rates are not assigned randomly, in the first column of Table 3.10 we present estimates of the parameters for this regression (using the status vector measure of benefits). We do this separately for two household types since preliminary analysis (not shown) suggested that this is the critical stratification in the data. The two groups are: married respondents and single or lone parent households. For married respondents, the effect of "importance" (how much of pre-separation household income was accounted for by the respondent's earnings) is likely to be quite important when we consider

the effects of the income replacement from UI. Clearly a respondent who has a high income spouse is less likely to be affected. Thus, we construct two new variables: "on claim * importance" and "(1-replacement rate) * importance". We term the latter the "adjusted replacement rate"; it is zero if either there is full replacement or the respondent had no earnings - in each case we would expect that the level of the UI benefit is irrelevant. Note that for most of the lone adult group the importance variable is unity or close to it so that for this group the two variables are effectively "on claim" and "(1-replacement rate)".

Table 3.10
Proportional Expenditure Changes and UI Benefits

	No Other Regressors	Full Set of Regressors	Restricted set of Regressors	
Single, adult dummy	9.34	5.81	6.87	-
	[1.2]	[0.6]	[0.8]	
On claim, married	2.21	2.18	1.98	-
	[1.1]	[0.9]	[0.8]	
On claim, single	-7.05	-6.99	1.98	-
	[1.3]	[1.2]	[0.8]	
Adjusted replacement rate, married	3.02	2.00	2.59	2.02
	[1.2]	[0.6]	[0.7]	[0.9]
Adjusted replacement rate, single	-11.35	-12.49	-11.92	-7.17
	[1.4]	[1.4]	[1.4]	[2.1]
Sample size	1,155	878	964	964

Note: See notes to Table 3.7. t-values in brackets.

The main finding is that the UI benefit scheme seems to have no discernible effect at all for married respondents. For singles and lone parents there are large effects but the noisiness of the data also leads to large standard errors for these so that none of the effects are individually "significant". Taken at face value the parameter estimates imply that an increase in the UI replacement rate from, say, 55 percent to 65 percent would lead to an increase in the total expenditure change of about 1.1 percent.

This all assumes that replacement rates are assigned randomly but, of course, they are not. As discussed at the beginning of this section there is considerable variation in replacement rates and this variation may be correlated with the error term in the above regression. To take an example, suppose a job separation represents a larger "permanent" shock for a high income than for a low income worker. Then the error term in the regression above will be negatively correlated with earnings in the reference job. However, because of the maximum benefits rule, the replacement rate is also negatively correlated with earnings. Consequently, the error term is positively correlated with the replacement rate. To take another example, workers with a low attachment to the labour force do not experience much of a permanent shock if they lose a job. Thus the error term is negatively correlated with "attachment". Entitlement,

however, is positively correlated with attachment since workers with low weeks of work in the pre-job loss period may not be eligible for UI or may have exhausted before the first interview. In this case, we have a negative correlation between the replacement rate and the error term. This shows informally that the replacement rate is likely to be endogenous and that the bias cannot be established *a priori*.

The solution to this problem is to include a set of controls for all the factors that may induce a correlation between the replacement rate and the error term. Thus we can include earnings on the reference job and some measure of attachment to the labour force to control for the two illustrative examples. Given the richness of the data, we are likely to be able to do this controlling for endogeneity in a comprehensive way. The regressors we use are all variables that were known by the respondent at the job separation. They are demographics (region of residence, the log of household size, dummies for high school and above high school education and age); access to liquid funds (log assets at the job separation[2] and home ownership); attachment to the labour force (tenure in the reference job); local labour market conditions (the local unemployment rate at the job separation); earnings on the reference job (the log, log squared and log cubed) and a measure of household permanent income at job separation (the log of household income in each of the years 1992-1994). The second columns of Table 3.10 presents the results from the regression using all these controls. We also use a sub-set of other regressors to allow for the fact that with so many regressors we are likely "swamping" the data. The variables excluded are largely those that were "insignificant", namely: region; household size; education; the local unemployment rate and household income in 1992 and 1993. The results are given in the third column. In the last column we also exclude the dummy for being a single adult and the on claim variables; a test of this restriction did not reject.

The first thing to note is that adding the extra regressors does not change the results by much even though many of the new regressors are highly correlated with the replacement rate! We still have no effect at all for married respondents and only a weak one for non-married. This result persists when we cut down on the number of other regressors (see column 3). If we exclude the on claim and family type variables then the coefficient and standard error on the replacement rate variables fall for the single group. The effect is, however, very small: a change in the replacement rate from 50 percent to 60 percent would lead to an increase in total expenditure of only 0.7 percent.

---

[2] Actually, the inverse hyperbolic sine to take account of the zeroes.

Putting all this together we have the following conclusions:

- variations in the replacement rate do not seem to lead to variations in the change in total expenditure for married respondents;

- for single respondents and lone parents, there does seem to be some effect from UI benefits to expenditures but it is very small. We estimate that an increase of ten percentage points in the replacement rate would lead to an increase of only 0.7 percent in expenditures.

... variations in the replacement rate do not seem to lead to variations in the change in total expenditure for married respondents... for single respondents and lone parents, there does seem to be some effect from UI benefits to expenditures but it is very small.

4. Conclusions

The foregoing analysis looked at three broad issues. The first is the working of the "dependents' rule" that gave a higher replacement rate for low earning UI claimants who had dependents. Our analysis suggested that many of those who received the higher benefit did not "need" it, in the sense that there was significant "other" income for the household. In particular, many married women with an employed spouse and children had low earnings in the reference job and qualified for the higher benefit even though they lived in households with "reasonable" incomes. We also found that many of those receiving the higher rate would have been eligible for Social Assistance at the usual statutory rate so that the extra benefit did not lead to extra household income (since Social Assistance is reduced to offset the higher benefit).

The second section analysed the effect of an unemployment spell on living standards. We used two measures to look at this: a self-reported measure of having suffered "hardship" as a result of the job separation and a measure of how total expenditure changed from the month before the job separation to the month before the first interview. Our main findings for "hardship" are that respondents who reported hardship are more likely:

- to have had a long unemployment spell;
- to be in an unsatisfactory job if they are employed now
- to be the sole 'bread-winner' (in particular a single person or a lone parent).

Our principal findings for changes in total expenditure are:

- expenditure changes are much attenuated relative to changes in household income (that is, households do seem to "smooth" consumption);
- currently employed respondents who are in an "unsatisfactory" job report expenditure changes that are similar to those who are currently unemployed;
- continuously unemployed respondents report the largest fall.

Finally, we looked more carefully at respondents who were unemployed at interview one. The main reason for doing this is that this group is the only one for which we can conduct a detailed analysis of the effects of UI benefits on income and consumption. Our principal findings are:

- **Replacement rate**: for those receiving UI benefit, the actual replacement rate provided by UI benefits is, on average, about ten percentage points above the statutory rate of 55 percent. Replacement rates vary significantly across claimants.

- **Personal income**: many unemployed respondents receiving UI report very little other personal income but a significant proportion (40 percent) of those receiving UI report personal income that is at least double their UI benefit. Many of the unemployed respondents who are not receiving UI report quite high personal incomes.

- **Household income**: for about half of "single adult" households, household income comes mainly from UI benefits. For the other half, however, either there is no UI benefit or there are other significant sources of income than benefits. For married respondents with a spouse who was not employed at the interview date, UI benefit receipts are even less important; for only about one third does UI benefit constitute more than 75 percent of household income. For married respondents with a spouse who was employed at the interview date, UI is relatively unimportant; for only about 10 percent of these households does the UI benefit received constitute more than three quarters of household income.

- **Changes**: although almost all respondents suffered an income loss because of the separation (that is, UI benefits are less than the net earnings in the reference job) the reported fall in household income was generally modest. The reported fall in total monthly expenditures is even smaller. Thus it seems that for this *highly selected* group who are still unemployed nine months after the separation date, households manage to insulate their expenditures quite well from earnings losses.

- **Expenditure changes**: lone parents had a bigger fall in expenditure than any other group; single people and married respondents who had a non-employed spouse had a larger fall than married respondents who had an employed spouse; those who had an intervening job had a lower fall; older respondents had a larger fall; high earners had a larger fall; those who had some assets at the reference separation had lower falls.

- **Expenditures and benefits**: there is very little evidence of a direct impact from benefit levels to changes in monthly expenditures. At most, there is a small effect for single parent households so that a 10 percentage point increase in their replacement rate would lead to a one percent increase in expenditures. This is consistent with the relatively weak links from benefits to personal income to household income to expenditures reported above.